

REMARKS

Claims 22-24 and 26-34 are pending in the present application. Claim 25 has been canceled. No claims have been allowed.

1. Rejection of Claims 22, 24, 25, 28, and 30 under 35 U.S.C. 102(b) over Sailer '554, and rejection of Claims 22 and 31 under 35 U.S.C. 103(a) over Sailer '554 in view of Chen et al. '344.

The Examiner rejected Claims 22, 24, 25, 28 and 30 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,410,554 to Sailer (hereinafter "Sailer '554"). Additionally, the Examiner rejected Claims 22 and 31 under 35 U.S.C. 103(a) as being unpatentable over Sailer '554 in view of U.S. Patent No. 4,322,344 to Chen et al. (herinafter "Chen et al. '344"). In particular, the Examiner relied upon the teaching of Chen et al. '344 of using a soy protein material as a meat analog. Claim 25 has been canceled.

Amended independent Claim 22 calls for a soy protein product, including a protein content of from about 60.0 wt. % to about 85.0 wt. % of total dry matter; a nitrogen solubility index ("NSI") of at least 85; the soy protein product forming a gel in the presence of water when treated with heat at a temperature of between about 60° C and about 100° C, the integrity of the gel not diminished in the presence of salt.

Applicants respectfully submit that amended independent Claim 22 is not anticipated by Sailer '554, nor is obvious over Sailer '554 in view of Chen et al. '344, because Sailer '554 and Chen et al. '554, either alone or in combination, fail to disclose each and every element of independent Claim 22. Specifically, Sailer '554 fails to disclose a soy protein product including a nitrogen solubility index ("NSI") of at least 85. By contrast, the maximum NSI obtained for the soy protein concentrates of Sailer '554 is 82. (see Example 2 of Sailer '554). The maximum NSI obtained for the soy protein products of Chen et al. '344 is 84. (see Table 1 of Example 2 of Chen et al. '344).

By contrast, the soy protein product called for in amended independent Claim 22 has an NSI of at least 85. Referring to the present patent application, the soy protein products obtained in Examples 1, 2, and 3 have nitrogen solubility indexes of 89.9, 96.0, and 96.99, respectively. Therefore, Applicants respectfully submit that amended independent Claim 22

is not anticipated by Sailer '554, nor is obvious over Sailer '554 in view of Chen et al. '344. Further, because Claims 24, 28, 30, and 31 each depend from amended independent Claim 22, Applicants respectfully submit that Claims 24, 28, 30, and 31 are also not anticipated by Sailer '554, nor obvious over Sailer '554 in view of Chen et al. '344.

**2. Rejection of Claims 22, 26, 27, and 29 under 35 U.S.C. 103(a)
over Sailer '554 in view of Orthoefer et al. '122.**

The Examiner rejected Claims 22, 26, 27, and 29 under 35 U.S.C. 103(a) as being unpatentable over Sailer '554 in view of U.S. Patent No. 4,346,122 to Orthoefer et al. (hereinafter "Orthoefer et al. '122"). In particular, the Examiner relied upon the teaching of Orthoefer et al. '122 to lower the viscosity of soy protein products in order to use them in a wider variety of products.

Orthoefer et al. '122 teaches the addition of sulfurous ion to "measurably decrease the viscosity of the extractant solution . . ." (col. 7, lines 12-16). Addition of sulfurous ion at the water extraction step is important, because "[t]he ultimate viscosity attributes of the dry isolate" depends in part upon "the level of sulfurous ions". (col. 9, lines 32-36). Water-soluble salts such as sulfites and bisulfites which form sulfurous acid may be added to "measurably decrease the viscosity of the extractant solution . . .". (col. 7, lines 12-36).

By contrast, Sailer '554 explicitly teaches against the use of sulfites and bisulfites in the extraction process, stating that a "critical parameter" of the process is "avoidance of the use of sulfur dioxide, sulfite, bisulfite, or oxidizing agents." (col. 2, lines 47-50, col. 3, lines 38-39). Further, in the Sailer '554 process, during the rapid wetting and acid leaching step, "it is imperative that no sulfur dioxide or salts of sulfurous acid be used in this or subsequent processing steps because of their deleterious impact on protein properties . . .". (col. 4, lines 27-30).

Thus, Orthoefer et al. '122 teaches that sulfurous ion, such as salts of sulfite or bisulfite, should be added during the water extraction step of the soy starting material to decrease the viscosity of the extract which, in turn, decreases the viscosity of the final soy isolate product. On the other hand, Sailer '554 explicitly teaches against the use of sulfurous ion in the water extraction step of the soy starting material or any subsequent steps in the Sailer '554 process.

For the foregoing reasons, Sailer '544 and Orthoefer et al. '122 clearly teach away from one another regarding how to obtain a soy product having a desired viscosity. Therefore, one of ordinary skill in the art would not combine the disclosures of Sailer '554 and Orthoefer et al. '122 in the manner relied upon by the Examiner. In view of the foregoing, Applicants respectfully submit that Claims 22, 26, 27, and 29 cannot be obvious over Sailer '554 in view of Orthoefer et al. '122.

3. Rejection of Claims 22, 23, 32, and 33 under 35 U.S.C. 103(a) over Sailer '554 in view of Altemueller et al. '295, and rejection of Claim 34 under 35 U.S.C. 103(a) over Sailer '554 in view of Altemueller et al. '295 and Orthoefer et al. '122.

The Examiner rejected Claims 22, 23, 32, and 33 under 35 U.S.C. 103(a) as being unpatentable over Sailer '554 in view of U.S. Patent No. 6,355,295 to Altemueller et al. (hereinafter "Altemueller et al. '295"). In particular, the Examiner relied upon the teaching of Altemueller et al. '295 that it is desirable to have a soy protein product that contains sucrose to improve the taste and functionality of the product. Also, the Examiner rejected Claim 34 under 35 U.S.C. 103(a) as being unpatentable over Sailer '554 in view of U.S. Patent No. 6,355,295 to Altemueller et al. '295 and further in view of Orthoefer et al. '122.

Applicants respectfully submit that Claims 22, 23, 32, and 33 are not obvious over Sailer '554 in view of Altemueller et al. '295 because one of ordinary skill in the art would not combine the disclosures of the foregoing references in the manner relied upon by the Examiner. Specifically, Sailer '554 in view of Altemueller et al. '295 teach away from one another regarding the soluble sugar content of the soy products which are disclosed therein.

Altemueller et al. '295 teaches producing a soy material having a high sucrose content by a process which generally involves hydrating a defatted soy material followed by irreversibly partially denaturing the soy proteins by heat treatment and/or shear with subsequent drying. (*see* col. 5, lines 50-52 and col. 21, line 66 through col. 26, line 54). In stark contrast, Sailer '554 discloses a process for producing a soy protein concentrate *which does not include soluble sugars at all*. Specifically, the Sailer '554 process involves acid leaching of a mixture of soy flour and water at pH 4.4 to 4.6, which is "a *critical* parameter in the practice of this invention". (col. 4, lines 64-67; *see also* col. 4, lines 3-7) (emphasis

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added). In the acid leaching step, soluble sugars are removed. (*see* col. 5, lines 59-64, "[t]he leaching process removes the soluble sugars ..."). Thus, Sailer '554 teaches the criticality of performing acid leaching of an aqueous slurry of soy material at pH 4.4 to 4.6, which removes the soluble sugars from the material. In this manner, one of ordinary skill in the art would not combine the disclosures of Sailer '554 and Altemueller et al. '295 in the manner relied upon by the Examiner. Therefore, Applicants respectfully submit that Claims 22, 23, 32, and 33 are not obvious over Sailer '554 in view of Altemueller et al. '295.

Further, because Claim 34 depends from independent Claim 32, Applicants respectfully submit that Claim 34 is also not obvious over any combination of Sailer '554 in view of Altemueller et al. '295.

It is believed that the above represents a complete response to the Official Action and reconsideration is requested. Specifically, Applicants respectfully submit that the application is in condition for allowance and respectfully request allowance thereof.

In the event Applicants have overlooked the need for an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby petition therefore and authorize that any charges be made to Deposit Account No. 02-0385, Baker & Daniels.

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Should the Examiner have any further questions regarding any of the foregoing, she is respectfully invited to telephone the undersigned at (260) 424-8000.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on: December 22, 2003

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Signature

December 22, 2003

Date